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EDITOR, - - KATHARINE BRANDEGEE

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A COLLECTION OF MEXICAN PLANTS.

T. S. BRANDEGEE.

Dr. C. A. Purpus, who is gathering cacti and orchids in Mexico, has made a most interesting collection during the past year, mainly from Ixtaccihuatl, a very high mountain not far distant from the City of Mexico.

A comparison, in Biologia Centrali-Americana, of the mountain floras of Mexico makes no mention of that of Ixtaccihuatl, and it seems as if this collection might be the first one from that locality. Most of the plants collected are known from other parts of Mexico, and many of them have been previously obtained by Mr. C. G. Pringle on Nevada de Toluca, but a number of undescribed forms were found. The plants from the high alpine region are especially interesting and a great number of them belong to genera growing upon the mountains of the "United States of the North." *Montia fontana* and *Sagina Linnæi* seem to be identical with the northern plants. Ranunculus is represented by *R. sibbaldioides* and *Donnianus*—there are several species of Cerastium that seem to have been very abundant. Potentilla is represented by species rarely collected: *P. ranunculoides*, *candicans*, *Richardii* and *comaroides*. Arenaria, Draba, Viola are well represented, and many other common northern genera were collected.

Many thanks are due Dr. J. M. Greenmann for determinations of doubtful species.

Thelypodium Mexicanum. Perennial, glabrous and glaucous, the leafy stems ascending 4–5 dm. high; larger leaves 10–12 cm. long, 2–3 cm. wide, spatulate, entire, acuminate, thin in texture,

broadly auriculate-clasping, upper leaves similar and smaller; inflorescence in a terminal spike and on short branches from the axils of the upper leaves; flowers light purple, petals linear, narrowed at the base, 3 mm. long; immature siliques 1 cm. long on a longer pedicel.

Collected on Ixtaccihuatl, 1903.

Thelypodium australe. An erect perennial, stems hirsute, especially below; leaves glabrous 2–4 cm. long, somewhat spatulate, obtuse, entire, 5–7 mm. wide, narrowed to near the base then broadly auriculate; petals rose-purple, 3 mm. long: stigma slightly 2-lobed; immature siliques ascending, 2 cm. long on a shorter pedicel, forming a loose spike more than 2 dm. long.

The specimens are young and do not have mature fruit. Collected on Ixtaccihuatl, 1903, at 9–10,000 ft. elevation, growing in open woods. No. 304.

Dalea Lemmoni Parry, was collected at Ixmiquilpan, Hidalgo, July, 1903, No. 405. The type of the species was found by Lemmon near Ft. Bowie, South Arizona, and a variety, *laxa* Watson, has been distributed with Pringle's sets, No. 1758, from Zacatecas, but this variety seems like a distinct species. Dr. Purpus' plant extends the range of *D. Lemmonii* much southward.

Machaonia fasciculata Gray, was collected on the Sierra de la Mesa, near Ixmiquilpan. The specimens agree with Dr. Gray's short description. The upper leaves are simply, and the lower fasciculately ternate. No. 446.

Spermacoce ambigua. Glabrous or hirtello-puberulent; stems 4-winged; stipular bristles few, longer than the sheath; leaves opposite, the lower ones apparently fascicled on account of the development of young shoots in the axils the larger ones linear-lanceolate, attenuate into a petiole 2–3 cm. long, 5 mm. wide; inflorescence axillary or in terminal spikes of small 1–5 flowered cymes, the uppermost minutely bracted; internodes 1–2 cm. long; peduncles and pedicels 1–2 mm. long; flowers tetramerous; corolla 2 mm. long, short funnel-form, lobes short, linear-lanceolate; style shortly branched; fruit turbinate, 1½ mm. long; short calyx lobes persistent.

This plant is a doubtful Spermacoce. Its general aspect is that of a Linum. Only tops were collected and they seem to have belonged to a fruticulose plant, but it may have been an annual. The fruit is not quite mature, so that the appearance of the perfectly ripe seed is unknown. It separates into two unequal one-seeded carpels that are entirely covered on the inner faces by the very thin dissepiments. The ovary is affixed at its middle to the septum and the radicle is inferior.

No. 417. Cordoba, Vera Cruz.

Gentiana perpusilla. Annual, stems several, one-flowered; basal leaves crowded, margins light-colored, 1 cm. long, ovate-spatulate, acuminate, connate-sheathing; stems slightly exceeded by the corolla that is green outside and light blue within; its lobes are short, the plaits broad and acuminate; capsule clavate-obovate at length exserted on a long stipe beyond the corolla.

This minute species is very near *G. humilis*. It was collected in wet meadows above the timber line of Ixtaccihuatl.

Gilia Purpusi. Annual, stem simple, erect, 1–2 dm. high, puberulent; leaves 3–4 cm. long, pinnate into 8–12 ovate, acute, sharp-incised leaflets that are cuneate at base into a short petiolule, gradually decreasing in size from the terminal one, upper leaves with few linear-lanceolate leaflets and the uppermost becoming the bracts of the few, loosely flowered panicle; corolla rotate, 15 mm. in diameter, deeply 5–cleft, light blue, lobes ovate; calyx 5-parted into linear, acute, white-margined lobes, longer than the capsule; seeds numerous, mucilaginous when wetted.

This species is nearest *G. incisa*, from which it differs mainly in having numerous pinnate leaves instead of a few basal lyrately-pinnatifid ones. Collected at Viesca, Coahuila. No. 132.

Castilleia Purpusi. Perennial, frutescent, hirsute; stems 1 dm. high, usually simple from long subterranean root branches; lower leaves linear-lanceolate, obtuse or acute, slightly attenuate at base, 1½–2 cm. long, 3–4 mm. wide; upper leaves and bracts trifid, the central lobe much the longest; calyx deeply cleft in front, slightly so behind, the lobes entire or emarginate; corolla 3½ cm. long, when fully grown exserted beyond the calyx lobes one-quarter its length: galea tomentose, green upon the

back; lip very short, the three teeth acuminate, the central one much shorter than the others.

The bracts and calyx are more or less tinged with red. Collected on rocky slopes above the timber line of Ixtaccihuatl. No. 320.

Krynitzkia Mexicana. Annual, 1 dm. or more high, rough-hispid, stems slender, branched; leaves oblanceolate, 1 cm. long; flowers in the axils of the leaves and bracts: corolla equalling the ovate-lanceolate, yellowish-hispid calyx lobes, 3 mm. long, crests inconspicuous: nutlets 1½ mm. long, ovate-triangular, the angles rounded except near the base, strongly muricate-granulose on the rounded back and plane faces, the ventral angle beveled from the apex ⅓ the length of the nutlet to the deeply excavated deltoid scar; gynobase subulate–pyramidal.

This plant is to be compared with *K. pusilla* Gray, a species with the flowers in small spikes that have a naked appearance as the mature fruit and calyx gradually falls away from the base upward. *K. Mexicana* is upright, more leafy, the flowers not in spikes and bears very different, larger nutlets. Collected at Viesca, Coahuila, 1903, No. 126. Mr. Pringle's No. 8301, also from Coahuila, is a larger form of the same species with more mature and rounder nutlets.

NEW SPECIES OF MEXICAN PLANTS.

BY J. M. GREENMAN.

Cerastium lithophilum. A low herbaceous perennial: stems branched, the slender branches often becoming somewhat matted: ultimate branches ascending, 0.5 to 1.5 dm. high, glandular-pubescent, mostly leafy: leaves crowded at the base of the ascending branches, more remote and about equalling the internodes above, often appressed to the stem, linear-lanceolate, 10 to 22 mm. long, 2 to 3 mm. broad, acute, entire, sessile and subconnate at the base, glandular-pubescent on both surfaces: inflorescence a terminal few-flowered cyme: flowers medium-sized for the genus: pedicels 4 mm. or less in length, and as well as the calyx densely glandular-pubescent: sepals oblong-lanceolate, 4.5 to 5 mm. long, 1.5 to 2 mm. broad, obtusish, glandular-pubescent on the outer surface: petals white, oblanceolate-cuneate, 6 to 7 mm. long, 2 mm. broad, deeply notched: stamens 10: ovary glabrous; styles 5: capsule at maturity barely exceeding the calyx, 10-toothed at the apex.—MEXICO. State of Mexico: in rocky soil, Mt. Ixtaccihuatl, March to July, 1903, *C. A. Purpus*, No. 231 (hb. Gr., hb. Brandg.).

Cerastium micropetalum. A low depressed annual (?), lanate-villous throughout: stems prostrate or ascending, 0.5 to 1 dm. in length, leafy: leaves opposite, sessile, linear-lanceolate, 8 to 15 mm. long, 2 to 3 mm. broad, acute, entire, subconnate at the base, lanate-villous on both surfaces: inflorescence terminating the ascending branches in few-flowered leafy cymes: flowers small: pedicels 5 mm. or less long, and as well as the stems above stipitate-glandular: sepals lance-oblong, about 3.5 mm. long, 1.5 mm. broad, acutish, glandular-pubescent: petals oblong-cuneate, 2 to 2.5 mm. long, notched for about one-third their length: stamens 10: ovary glabrous; styles 5.—MEXICO. State of Mexico: Mt. Ixtaccihuatl, 1903, *C. A. Purpus*, No. 473 (hb. Gr., hb. Brandg.).

Cerastium Purpusi. A low depressed herbaceous perennial (?), forming rather dense tufts, 0.5 to 1.2 dm. in diameter: stems leafy, villous-pubescent: leaves spatulate to oblong, 8 to 20 mm. long, 3 to 8 mm. broad, obtuse, entire, more or less white-villous-

pubescent on both surfaces, the lowermost narrowed into a subpetiolate base, the upper sessile: infloresence terminal, cymose, few-flowered; pedicels 4 mm. or less in length: flowers medium-sized for the genus, about 1 cm. in diameter: sepals oblong, obtuse, 5 mm. long, 2 to 2.5 mm. broad, villous-pubescent: petals oblong-cuneate, exceeding the calyx, 6 to 7 mm. long, notched at the apex: ovary glabrous; styles 5: capsule at maturity slightly exceeding the calyx, about 6 mm. long: seeds subrotund, about 1 mm. in diameter, reddish, minutely tuberculate.—MEXICO. State of Mexico: Mt. Ixtaccihuatl, 1903, *C. A. Purpus*, No. 472 (hb. Gr., hb. Brandg.).

Arenaria oresbia. An herbaceous perennial: stems prostrate or ascending, bifarious-pubescent; internodes 1 to 30 mm. in length: leaves opposite, close and more or less imbricated, or remote and much exceeded by the internodes, lanceolate to ovate-lanceolate, 4 to 10 mm. long, 1 to 4 mm. broad, acute, entire, more or less ciliate, subconnate at the base, thickish, glabrous on both surfaces, often pubescent on the prominent or somewhat keeled midrib beneath: flowers terminal or lateral, few: pedicels mostly short (less than 5 mm. long), occasionally 2 cm. in length, pubescent: calyx slightly urceolate; sepals lance-ovate and acute to lance-oblong and rather abruptly narrowed at the mucronate-acute apex, 4 to 6 mm. long, rather conspicuously keeled, scarious-margined, glabrous: petals exceeding the calyx, oblong-spatulate to slightly obovoid, 5 to 8 mm. long, sometimes slightly undulate-margined, white: stamens 10: ovary glabrous; styles 3: capsule 4 to 5 mm. long, separating from the top at maturity into 6 valves. —MEXICO. State of Mexico: meadows on Mt. Ixtaccihuatl, altitude 3350 to 3655 m., March to July, 1903, *C. A. Purpus*, No. 288 (hb. Gr., hb. Brandg.). State of Jalisco: Nevado de Colima, altitude 3655 m., 16 May, 1903, *C. G. Pringle*, No. 5514 (hb. Gr.).

The leaves in Mr. Pringle's specimens are less ciliate than those collected by Mr. Purpus, but in other regards the correspondence is so close that the writer has no doubt the two plants are representatives of one and the same species. *A. oresbia* suggests in some ways the *A. scopulorum*, HBK., but the leaves of the former are of distinctly different outline, the calyx-lobes are

acute, or at least mucronate-acute, and the ovules and seeds are far more numerous than in the latter species.

Dalea erythrorhiza. An herbaceous perennial: stems usually several from a suffruticose base, prostrate or ascending, 1 to 3 dm. in length, simple or subdichotomously branched, glabrous, tuberculate-glandular, reddish: leaves including the petiole 1.5 to 6 cm. long, 1 to 2 cm. broad, pinnately compound; petioles as well as the rhachises sparingly pubescent; leaflets petiolulate, 7 to 15, disposed in 3 to 7 pairs, oblong-obovate, 3 to 10 mm. long, 1.5 to 6 mm. broad, retuse, entire, light green above, paler beneath, glabrous on both surfaces, glandular-punctate: infloresence spicate, 1 to 4 cm. in length; peduncles 1 cm. or less long: flowers bracteate; bracts ovate-acuminate, 7 to 8 mm. long, acute, glabrous, glandular-punctate, often purplish, scarious-margined, at first completely surrounding the flower, early caducous: calyx deeply 5-toothed, long-sericeous-villous along the ten ribs and on the linear-attenuate calyx-teeth, corolla barely exceeding the calyx, dark blue; vexillum with a slender claw and an ovate-oblong 3-mm.-long lamina, bearing as well as the wings and parts of the keel 2 to 6 glands at the junction of lamina and claw: ovary 2-ovuled, and as well as the base of the style long-villous-pubescent.—MEXICO. State of Durango: near the City of Durango, April to November, 1896, *Dr. Edward Palmer*, No. 487 (hb. Gr.). State of Zacatecas: in gravelly soil, near the City of Zacatecas, altitude 2135 to 2440 m., August, 1903, *C. A. Purpus*, No. 452 (hb. Gr., hb., Brandg.).

Nama torynophyllum. A low depressed much-branched annual, forming rather dense mats 1 to 1.5 dm. in diameter, cinereous-pubescent throughout: leaves alternate, spatulate, including the petiole 0.5 to 1.5 cm. long, 2 to 5 mm. broad, rounded at the apex, entire, strongly recurved-margined, contracted below to a narrowly winged petiole, presenting an inverted spoon-like appearance, cinereous-hirsute on both surfaces and on the under or concave surface bearing also stipitate-glandular hairs: flowers small, axillary, usually short-pedicellate; pedicels 3 mm. or less in length: calyx deeply 5-parted, persistent; divisions linear, obtuse, pubescent: corolla white, about 3 mm. long, slightly exceed-

ing the calyx, 5-lobed; lobes subrotund: ovary glabrous: styles essentially equal, 0.5 mm. or less in length, glabrous, more or less persistent: capsule oblong, about 2.5 mm. long, glabrous, many-seeded.—MEXICO. State of Coahuila: in sandy soil, Peña, 1903, *C. A. Purpus*, No. 124 (hb. Gr., hb. Brandg.).

Eupatorium rivale. Stem terete, puberulent: leaves opposite, petiolate, ovate, 7 to 11 cm. long, 5 to 8 cm. broad, acuminate, acute, unequally crenate-dentate, cordate, puberulent above, pubescent on the nerves and veins beneath and bearing here and there on the under surface patches of tomentum, 3–5-nerved from the base; petioles 3 to 5.5 cm. long: heads 8 to 10 mm. high, disposed in finely pubescent axillary corymbs together forming an elongated leafy panicle: peduncles slender: involucre narrowly campanulate, shorter than the 25 to 30 flowers; bracts of the involucre 2–3-seriate, subequal or the outermost shorter, striate, slightly pubescent: corollas white: pappus of uniform setæ, white: mature achenes 2 mm. long, pubescent on the angles.—MEXICO. State of Mexico: Mt. Ixtaccihuatl, altitude 2150 to 2460 m., 1903, *C. A. Purpus*, No. 213 (hb. Gr., and hb. Brandg.). In general aspect *E. rivale* resembles *E. petiolare*, Moç., but is readily distinguished from it by having the leaves only sparingly pubescent beneath, smaller and fewer-flowered heads, and the corolla-lobes externally pilose-pubescent.

Eupatorium vernicosum, Schz. Bip. in herb. Shrub: stem much-branched; ultimate branchlets as well as the foliage and inflorescence glutinous: leaves opposite, petiolate, ovate, 2 to 5.5 cm. long, 2 to 4.5 cm. broad, acute or short-acuminate, dentate, cordate at the base, glabrous on both surfaces; petioles 1 to 2.5 cm. long: inflorescence few-headed cymes, terminating the stem and branches; peduncles 1 to 3 cm. long: heads 1.5 cm. high, 40–50-flowered: involucre 3-seriate; bracts of the involucre lanceolate, 10 to 13 mm. long, acute, subequal or the outermost shorter, conspicuously glutinous: flowers exceeding the involucre; pappus of unequal setæ; corollas white or roseate: mature achenes 5 mm. long, pubescent, pentagonal in cross-section.—MEXICO. State of Mexico: rocks near timber line, Mt. Ixtaccihuatl, altitude 3350 to 3650 m., 1903, *C. A. Purpus*, No. 180 (hb. Gr., hb. Brandg.).

Without locality, *Ervendberg*, No. 376*a* (hb. Gr.). This species has its affinity with *E. mygindæfolium*, Gray, *E. chapalense*, Watson, and *E. campylocladum*, Robinson, but is amply distinct from all of them. The unequal setæ of the pappus is rather an exceptional trait in the genus, nevertheless all the other essential characters are in common with typical *Eupatorium*.

PALMS OF BAJA CALIFORNIA.

BY T. S. BRANDEGEE.

Washingtonia filifera, *W. Sonoræ*, *Erythea armata* and *E. edulis* are grown in the gardens about San Diego, and a few young plants of *Erythea Brandegei* are established. The seeds of *E. Brandegei* have been extensively planted in Southern California recently, and it seems as if this palm should grow well in its new habitat, for it will not experience as much frost and ice as it does on its native mountains.

Wendland based the genus Washingtonia upon a palm previously known as *Brahea flifera*. *W. robusta* was later added to the genus, but is by many considered to be doubtfully distinct, and there seems to be a good deal of uncertainty concerning both these species. In Botanische Zeitung, 37, 1878, Wendland describes the genus Washingtonia and writes that credit is due to Herr J. Linden of Ghent for the first importation, perhaps in the year 1869—at the time of this description seed collected a few years after 1870 in Cantillas Cañon had been distributed. One of the earliest notices of the palms now known as Washingtonia is in Botanische Zeitung, 34, where *Pritchardia filamentosa* is mentioned as a garden name for plants raised in Europe, said to have been collected about Arizona and the Colorado River. The locality from which the seed came that Wendland examined later is not stated. Under the rule, "once a synonym always a synonym," the name Washingtonia has been changed to Neowashingtonia, but, in common usage, the new name is disregarded.

In *Pflanzenfamilien* the genus is considered by Drude a subgenus of Pritchardia.

Much of the *W. filifera* now cultivated in California probably came from seed collected along the western edge of the Colorado Desert and Cantillas Cañon, a locality in Baja California, just below the boundary line near Campo. This palm is a native of the dry climate of the interior, generally growing on the eastern slope of the mountains, where in the bottom of the cañons their roots will find plenty of water. I do not know a locality where they are found in a cañon running toward the western slope, but they may grow in such situations in Central Lower California, where so many plants of the Colorado Desert find their way to near the Pacific Coast.

Washingtonia Sonoræ was described from specimens collected about Guaymas by Dr. Palmer, and it is not improbable that the species may extend northward along the Gulf of California to the region about the Rio Colorado, from which the first plants of *W. filifera* came. This palm grows also at Mazatlan and along the coast of the Cape Region of Lower California. On account of its love for the ocean breezes, it is a more suitable palm for the upper California coast than *W. filifera* from higher altitudes and a desert climate. At San José del Cabo the residents recognize two forms of *W. Sonoræ*, which they name "Palma blanca" and "Palma rubra." A way of distinguishing with certainty these two varieties is by cutting into the trunk and the color of the wood, white or reddish, is then evident. There seems to be no other definite character by which the two varieties can be distinguished.

Erytheas are palms of much slower growth than the Washingtonias. *E. armata*, or the blue palm, is abundant in Northern Lower California, growing in cañons or along the sandy bottom of dry streams after they leave the mountains, on both eastern and western slopes.

E. edulis, the Guadalupe palm, is endemic upon Guadalupe Island. On the eastern slope of the island it is confined to the cañons, but on the western slope it often covers large areas.

E. Brandegei,* a description of which recently appeared in Gartenflora and is here reprinted for the benefit of those who may not have access to that publication, grows abundantly in the mountains of the Cape Region of Lower California, in the cañons or often covering mountain slopes on northern exposures. Generally, the dead leaves fall away, leaving a hard, smooth trunk less than two feet in diameter, even though it may reach an altitude of 125 feet. When it reaches a great height, the trunks lose the stiffness of the other species of the genus and wave with the wind. It is known to the people of the Cape Region as "La Palmia," and a form of it not well distinguished they name "Palma negra." A few trees in cultivation about San José del Cabo are called Palma de Tlaco. The young buds, two feet long, are cut from the top of the tree and eaten by the people of the vicinity—they are soft and taste very much like a raw turnip. The young shoots of E. edulis also are eaten by the Mexicans.

NOTES ON CACTEÆ.

KATHARINE BRANDEGEE.

The first "Nachtrage" of Dr. Karl Schumann's "Monographia Cactacearum" has appearod. It is a pamphlet of viii–171 pages, and covers the period 1898-1902.

Perhaps the most noticeable thing in the work is the absence of the "Cat." citations so numerous in the previous publication, but the many named "Reiches," bringing together all sorts of heterogeneous elements, are still in evidence.

***Erythea Brandegeei**, C. A. Purpus. n. sp. Trunco procero interdum 30 m. alto vel ultra, 3 dm. diametro fere usque ad coronam laeve. Foliis 10–12, flabelliformibus, subtomentosis, sparse filiferis, subtus pallide glaucis, atro viridioribus, vix 1 m. longis, ultra medium in segmenta angusta (1-3 cm. lata) divisis, segmentis ad apicem bifidis, laciniis 2–10 cm. longis; petiolo glabro, 1–1½ m. longo, margine dentibus numerosis, ad 5 mm. longis, vestito. Panicula tomentosa, ut videtur paullo ramosa. Floribus sessilibus, subsolitariis, 2½ mm. longis; calyce 3-partito, lobis deltoideis, subciliatis, corolla valvata, 3 loba lobis quam lobis calycinis duplo longioribus; filamentis deltoideeis-acuminatis, ovario oblongo, carpellis mox separatis, stylis brevibus, connatis; fructu subsolitario, 10–15 mm. diametro, latere ventrali subapplanato, embryone ad medium versus lateris dorsalis seminis.

Valde differte a duabus speciebus adhuc descriptis (E. edulis et E. armata) foliis textura, tenuire, a medio declinatis. Fructus magnitudine E. edulis, sed pedunculo longiore macula embryonale seminis deficiente.

The sequence of the subfamilies is not changed, but is suggested in the preliminary pages. In the earlier work it ran: Subfam. i. Cereoideæ; ii. Opuntioideæ iii. Peireskioideæ. In the later this order is reversed, the seed coats are not mentioned, and the classification rests principally upon the presence or absence of barbed setæ (glochidia). It is perilous in the present state of our knowledge to generalize upon the surface structure of seeds as is evidenced by his statement that the seeds of the Cereoideæ are "always shining, brittle and black." Certainly they are not always shining, and they are commonly red or yellowish-brown in two sections of Mamillaria (Coryphantha and Lactescentes). "Always" is a dangerous word in this family of plants.

Some of the new species of mamillaria described by Prof. Coulter,* *alternatus*, *brunneus*, *capillaris*, *densispinis*, *eschauzieri*, *maculatus*, *Pringlei*, *radians-pectenoides*, omitted from Monog. Cact., have not been included in the Nachtrage, although the author's attention† was called to the matter.

Such omissions, which are but examples of many others, it is needless to say, seriously injure the value of the work.

CEREUS GREGGII Engelm, has been found in Sierra de la Trinidad, Baja California, by Mr. Carlos Grabendorfer, who writes that it is locally known as "Reina de la Noche."

CEREUS STELLATUS Pfeiff. To this species, according to Prof. Schumann, belongs *C. Sonorensis* Runge Cat. & *C. Simonii* Hildm. *C. Sonorensis* was later described by Schumann, M. f. K. xi, 135, (1901). But *C. Sonorensis* is certainly a synonym of *C. Alamosensis* Coult., the type of which was collected at Alamos in Sonora. It has been collected also at Topolobampo, Sinaloa, by Captain Porter, by Dr. Purpus not far from Guaymas, and abundantly in Northern Sonora by Mrs. Main.

The following notes were taken from plants flowering in our garden:

Flowers 6–8 cm. long, nearly tubular, expansion less than 3 cm., the whole flower with the ovary of the same color, somewhat translucent coral-red, but of different shades in different

*Cont. U. S. Nat. Museum, iii, No. 2, under "Cactus."
†Zoe, V. 16.

plants; becoming recurved; filaments rosy, stout at base anthers violet or purplish, shorter than the style which is white with white acute stigmas which connive, forming a conical body. Scales of the ovary triangular ovate, bearing wool and sometimes bristles. Spines variable in number.

The flower opens in the morning and remains expanded night and day for about 48 hours. No fruit formed on our plants; the peculiar structure of the stigmas perhaps marks their degeneration.

CEREUS THURBERI Engelm. var. **littoralis.** Stems low branching from the base, the branches more slender than in the type and strongly curved. Flowers reddish, much darker than the type. Fruit smaller and said to be better flavored than typical *C. Thurberi.*

On steep seacoast bluffs between San José del Cabo and Cabo San Lucas, Baja California, collected by T. S. Brandegee in 1892* and later by Dr. C. A. Purpus.

Cereus vagans. Stems prostrate, branching, light green, but the younger stems and joints often purple, reaching 1 m. in length, 20–25 mm. in diameter at base with roots springing from the whole length, texture rather dry and horny; ribs 8–9 rounded, elevated, well separated, not tuberculate; areolae of the same rib on old shoots 12–15 mm. asunder, woolly, the spines much shorter than the internodes. Spines slender but stiff, white or whitish, 3–6 mm. long, not regularly arranged radials 8–12 with 1–4 slender and longer bristly ones below, centrals 2–6 in two series.

Collected by Mr. T. S. Brandegee on El Creston, an island in the harbor at Mazatlan, at various times, and later by Dr. C. A. Purpus, neither of them finding traces of flowers or fruit. It has been in cultivation in our green-house and in the open air for three years, and although it flourishes, some of the stems reaching 2 m. in length, it has not so far bloomed.

I am sorry to have to describe a plant without flowers or fruit, but it is done in order to obviate a greater evil. It has gone into

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*Proc. Cal. Acad., ser. 2, iii, 223.

trade under this name and there is always danger of such plants being loosely described and no type kept.

Cereus pensilis. Ribs 8–10 little elevated, often lost in low tubercles; areolæ 3–4 mm. in diameter about 2 cm. apart on the same rib; spines rather slender, bulbous at base, at first yellow, becoming reddish gray, on the young growth usually 8 radials, 1 central, all of about the same length—2 cm., in age somewhat longer, more numerous and arranged in about 3 series; flowers red, 5-6 cm. in length, with rather long and slender tube, the expansion not equaling the length; areolæ of the ovary and tube with yellowish wool and slender chestnut spines 1 cm. or more in length; fruit globular, spinose, 1½–2 cm. in diameter; seeds very numerous, black rugose, nearly 2 mm. long, very oblique at base.

Collected by T. S. Brandegee, No. 246 of his "Flora of the Cape Region" in the Sierra de la Laguna, Baja California, since collected by him in the same place on several occasions, and also by Dr. C. A. Purpus. It is perhaps also the plant mentioned* under *C. Phoeniccus* var. *Pacificus* as growing on cliffs at Comondu.

It is a very conspicuos plant as it hangs six feet in length, with many scarlet red blossoms from the mountain ledges. Wherever it grows on levels, however, the branches are more or less upright and a foot or more long. It probably belongs to the § Echinocereus.

Cereus (Echinocereus) sciurus. Densely cespitose forming clumps sometimes 2 feet in diameter, the numerous short, upright heads covered with slender short spines, gray on the older parts, light yellowish brown with darker tips on the young growth; ribs 12-17, low and much disconnected, on the growth of the year often entirely resolved into tubercles; areolæ small soon naked, 5–8 mm. apart on the same rib; radial spines 15–18, centrals 1–6, laterals longest rarely reaching 15 mm. very slender, centrals little stouter; flowers 7 cm. long, about 9 cm. in expansion; ovary and tube densely spinose; petals in 2–4 rows

*Proc. Cal. Acad., ser. 2, ii, 162.

bright magenta, paler towards the base the tips erose, acute, the outer surface marked with numerous striæ; stamens numerous with greenish filaments and yellow anthers; pistil green with obtuse stigmas; seeds tuberculate about 1 mm. long.

Collected by T. S. Brandegee April, 1897, on hills near San José del Cabo, Baja California.

Mamillaria Poselgeri Hildm. Prof. Schumann identifies *M. Roseana* Brandg. with the above published in "Gartenflora" 1885, p 559, abb. 131. The omission from "Monog. Cact." of this place of publication in a well known German journal was hardly excusable.

M. Schumannii Hildm. To this species, very poorly characterized, Prof. Schumann refers, probably correctly, *M. venusta* Brandg.

Mamillaria Pringlei Coult. In previous notes* by some slip for which I cannot account, this species was compared with *M. Carretii*, with which it is in no way connected. The plant intended was *M. Pfeifferi*, with which it appears to be entirely identical. Never having read over the paper until the preparation of this paper, I was unaware of the confusion.

M. obscura Hildm. To this *M. Kleinschmidtiana* Zeiss. appears to be much more closely related than to *M. angularis* Lk. & Otto, where Prof. Schumann refers it.

Mamillaria petrophila. Lactescent, attaining a height and diameter of 15 cm. but ordinarily a third less, tubercles short with broad base; areolæ soon naked; spines chestnut color, becoming paler in age; radials 10, about 1 cm. long, central 1, sometimes 2, stronger, darker, and nearly twice as long, all porrect spreading; axils densely clothed nearly to the base of the plant with unusually large and long tufts of fulvous wool in which the fruits are nearly hidden; flowers bright greenish-yellow within and without, abruptly expanded above the ovary, 18–20 mm. long; petals and sepals hardly acute, lightly erose: stamens and 6-parted stigma the same color as the flower: berry small, roundish, color not noted; seeds reddish, smooth, less than 1 mm. in length.

Collected by Mr. T. S. Brandegee in Sierra de la Laguna, and Sierra San Francisquito in September and October, 1899, and later in the same general region by Dr. C. A. Purpus.

Mamillaria lenta. Cespitose by dichotomous branching forming nearly flat-topped masses, the body thick and fleshy, the divisions 3–5 cm. in diameter and probabiy 1–2 cm. above ground: tubercles slenderly conical, about 1 cm. long, light green; areolæ not woolly; spines all spreading and all alike excepting that the later formed are yellow in the center of young tubercles, they are so soft and fragile as to be difficult to count, but appear to be 30–40 in number; axils with short persistent wool and an occasional bristle; flowers not seen, fruit clavate, red, 1 cm. long, few-seeded; seeds dull black, more than 1 mm. long, tuberculate not punctate, strongly constricted above the hilum, the upper part globose.

Collected by Dr. C. A. Purpus on rocks near Viesca in Coahuila, January, 1904.

OPUNTIA BRADTIANA (Coult.) For this plant Prof. Schumann adopts the name *cereiformis*. The history given below shows that the oldest descriptions, both under Cereus and Opuntia, belong to *Bradtiana*.

Grusonia cerciformis Hort. Nicolai, nomen nudum 1894

Grusonia cereiformis, M. J. K., iv, 116, no notice or description whatever of the plant—a dissertation by Dr. Schumann on the impropriety of catalogue names.

Cereus Bradtianus Coult. Cont. Nat. Mus., iii, 406, (April, 1896)

Grusonia cereiformis M. J. K., vi, 127, (August, 1896). Herr Liebner announced that the plant to which this name had been given was growing and was undoubtedly an Opuntia, as it showed the characteristic leaves.

Grusonia cereiformis Reichb. Jun. M. J. K. vi, 177, (December, 1896) Schumann writes on seeing the plant growing in Rebut's collection; that there is on account of the leaves a "growing probability" of its belonging to Opuntia.

Opuntia Bradtiana Brandegee, Erythea v, 121, (Nov. 24, 1897.)

Opuntia cereiformis Weber in Bois' Dict. 897. March, 1898.

Opuntia cereiformis Web., Schumann in Monog. Cact. 660, 1898, Synonymy, *Grusonia cereiformis*, *Cereus Bradtianus*, *O. Bradtiana*.

Prof. Schuman therefore has deliberately given priority to an undescribed catalogue name. No doubt *cereiformis* is the preferable name and the use of uneuphonious personal names for species is a crying evil, but no such reason could have influenced the author of *E. Strausianus*, *Froelichianus*, *Soehrensii*, *O. Schweriniana*, *C. Lauterbachii*, *C. Damazioi*, etc.

The real reason, probably, is the one given in Monog. Cact. under *M. centricirrha*, which is adopted in spite of a dozen older names, because the plant is best known under that name in Germany. The few people living outside of Germany apparently do not count.

A NEW CALAMINTHA.

BY T. S. BRANDEGEE.

Calamintha Chandleri. Stems frutescent, branching, 1 m. high, forming clumps, upper parts pubescent: leaves orbicular or broadly ovate, with truncate or cuneate base, obtuse, crenate-serrate or entire, 1 cm. long and broad, slightly pubescent on the upper face, more so on the lower: petioles pubescent, 5 mm. long: flowers single or in 2-4-flowered cymes in the axils of the leaves; peduncles and pedicels 1–2 mm. long: bracts linear-lanceolate: calyx tubular-campanulate, slightly bilabiate, 6–7 mm. long; the teeth about 1 mm. long, triangular, acuminate, those of the lower lip slightly longer: corolla 13 mm. long, pubescent outside, cream-white; the tube straight, as long as the calyx; lobes of the lower lip 3 mm. long and broad, the middle one largest, those of the upper lip short: stamens conniving in pairs: style bearing a few scattered hairs nearly its whole length.

Collected by H. P. Chandler near San Diego, California, on Mount San Miguel, May 21, 1904.

AUGUST 19, 1905

PLANTS FROM SINALOA, MEXICO.

BY T. S. BRANDEGEE.

The collection upon which this paper is based was made in Sinaloa. August, 1904, I landed at Altata and from there went to Culiacan. The flora about this city and along the railway to Altata was collected during the months of September and October. In November the plants growing about Cofradia and in the Cerro Colorado were collected. Cofradia and Cerro Colorado are east from Culiacan thirty or more miles, and near to the boundary line of the State of Durango. Cerro Colorado is a small mountain with peaks of red rock that are perhaps 2000 feet above sea level. Abundant rains fell during August, September and October, bringing forth a luxuriant vegetation and making it possible to find many species. The following pages contain in addition to descriptions of new species, only names of those plants whose distribution seems worthy of note.

Sagittaria Greggii J. G. Smith.? Growing five feet high in ponds about Culiacan. No mature fruit was collected.

Andropogon brevifolius Sw. Cerro Colorado.

Andropogon fastigiatus Sw. Cofradia and very abundant on Cerro Colorado.

Paspalum pyramidale Nees. Growing in ponds about Culiacan.

Panicum Oaxacense Fourn. Cerro Colorado.

Pennisetum setosum Rich. Cerro Colorado.

Campulosus planifolius Presl. Identified at the Department of Agrostology, Washington, D. C.

Erythea aculeata. Trunk 6–7 m. high: blade of the leaf 4–6 dm. long, cleft below the middle; the segments bifid at the apex, about forty in number, slightly filamentose with threads 2.5 dm. long: petioles slender, 5 dm. and more long, triangular in cross-section, armed upon the edges with slightly hooked spines that are 1 mm. long: fruit globular, somewhat flattened on one side, 2.5 cm. in diameter: embryo near the base on the dorsal side: albumen deeply excavated near the base of the ventral side forming a cavity 7 mm. long and half as wide.

This palm is small and never becomes more than about twenty feet high. The petiole of my specimen is only 1 cm. wide. The dry fruit in appearance is much like that of *E. edulis*, but the excavation in the albumen is larger. The flowers are unknown. Abundant near Cofradia.

Sabal sp. A handsome palm growing near Cofradia.

Washingtonia Sonoræ Watson. A few slender palms, probably belonging to this species, grow on the Plaza of Culiacan.

Tradescantia Palmeri Rose. Culiacan.

Echeandia nodosa Watson. Culiacan, Cofradia.

Pitcairnia monticola. Acaulescent: leaves linear, 4–6 mm. wide below the middle, 3–3.5 dm. long, attenuate to each end, margins entire, more or less flocculent-pubescent: the 2-dm. long peduncle and linear-acuminate bract-leaves white with a deciduous tomentum: lower bract-leaves armed with short, recurved spines: flowers 10–14, in a simple raceme 6–8 cm. long; pedicels about 8 mm. long; petals twice the length of the 2-cm. long sepals: bracts nearly as long or exceeding the sepals.

Growing on the ground about the summit of Cerro Colorado. The color of the flower-bracts and sepals is light red and probably the petals when fresh are also red. The species is nearest *P. Jaliscana*, differing in its white tomentose peduncle and raceme, longer flower-bracts and smaller flowers. The specimens must have been more tomentose when young.

Thalia geniculata L. Growing in shallow ponds about Culiacan.

Trophis sp. Perhaps a form of *T. Americana*. The spikes of pistillate flowers are 1-4-flowered. A small tree growing on Cerro Colorado.

Populus dimorpha. A rough-barked tree with a trunk becoming 2 m. in thickness, spreading branches and 20 m. or more high: leaves of the young trees linear-lanceolate, attenuate into a very short petiole, 1–3 cm. long, 2 mm. wide, serrate: leaves of older trees deltoid-ovate, long-acuminate, 10 cm. long, 7 cm. wide, crenate-serrate, truncate or cuneate at base: petioles flattened, 5 cm. long: pistillate aments about 7 cm. long, growing from wood of the preceding year, much exceeded by the young

growth of the present year: capsule ovate-acuminate, 2-valved, 7 mm. long, opening in September. Common along the Culiacan, Humaya and Tamazula Rivers.

The young trees bearing only linear leaves resemble willows, and until I saw older trees bearing also deltoid leaves was it certain that they belonged to *Populus*. Trees that bear both sorts of foliage have numerous intermediate leaf forms. The aments growing from the almost leafless part of the branches gives the fruiting tree an appearance different from a typical cottonwood. All other species of the genus bloom in the early part of the year and soon mature their fruit. The wood is very soft and is brought into Culiacan to be made into boards. Staminate aments and pistillate flowers were not seen.

Okenia hypogæa C. & S. Leaves with sinuate margins, stamens, 7, peduncles elongated to 15 cm. and more. Collected on sand dunes near Altata.

Philoxerus vermicularis Moq. Growing on saline flats about Altata.

Cleome Sinaloensis. Annual, 3–4 dm. high, much branched, viscid-pubescent, somewhat rough to the touch: petioles 1.5–2 cm. long; leaflets 3, broadly ovate-acuminate, 2.5 cm. long, 1.4 cm. wide; bracts nearly sessile, glandular-pubescent: calyx lobes linear, 4 mm. long; petals a half longer, yellowish-white, spatulate; stamens 6; pedicel of mature pod 2 cm. long; stipe 3 mm. long; capsule torulose, pointed at both ends, glabrous, 4–4.5 cm. long, 3 mm. wide; seeds muricate and finely striate, 2.5 mm. in diameter. Collected in the vicinity of Culiacan.

Drymaria effusa Gray. Cofradia. Compared with the type by Dr. J. M. Greenman.

Acacia crinita. A bush 4–5 m. high, the unarmed young branches and petioles villous-hirsute with white or yellowish hairs that are 4–5 mm. long; petiole with rachis of the leaf 5–6 cm. long; pinnæ 2–3 pairs 4–10 cm. long: leaflets 4–8 pairs, ovate-oblong, the longer 23 mm. long, 14 mm. wide, obtuse or retuse, glabrous on both surfaces; stipules linear-lanceolate, 8 mm. long, ciliate; the oblong or globular heads on axillary peduncles 3–4 cm. long; flowers white: stamens very numerous; fruit unknown.

This slender bush grows on the slopes of the Cerro Colorado. It had not come into bloom, and diligent search was required to find a few flowering heads. Dr. Robinson obligingly compared specimens with *A. villosa*, to which it seems to be allied.

Mimosa Palmeri Rose. Collected only in fruit. The pointed pubescent pod 3–4 cm. long, 3 mm. wide, 6-8 seeded and short-stipulate, is curved into a semi-circle. Common about Cofradia. Dr. Palmer collected it near Alamos in flower.

Mimosa spirocarpa Rose. Spikes 12–14 cm. long. It formed no fruit. Common about Culiacan.

Mimosa polyantha Benth., and its var., *levior* Rob., are abundant about Culiacan.

Mimosa distachya Cav. Near Altata.

Mimosa asperata L. var. *Berlandieri* Rob. Much less pubescent and strigilose than Pringle's 3798.

Pithecolobium. Several species were collected and have not been determined.

Calliandra rupestris. A small tree 4 m. high, the branches unarmed, brown, glabrous: internodes 3–6 cm. long; petioles 14 mm. long; pinnæ 1 pair, 7 mm. long, slightly pubescent: leaflets 2 pairs, the veins conspicuous, the inner one of the lower pair small; terminal leaflets oblique-ovate, obtuse or somewhat pointed, apiculate, 3 cm. long, 15 mm. wide, glabrous excepting a few marginal hairs; larger leaflet of lower pair similar to those of the upper pair, the inner one rarely absent, 2–7 mm. long; stipules broadly lanceolate, 4 mm. long; flowers sessile in heads on peduncles 12 mm. long, one or two from the axils: calyx 2 mm. long, the short teeth rufous-pubescent; corolla 5 mm. long; stamens 10, 3–5 cm. long, dark purple below shading into a lighter color above; legume unknown.

Growing among large rocks in a cañon near Cofradia. From their described characters this species seems to be near *C. tergemina* and *C. Seemanni.*

Calliandra Coulteri Watson. A form with 14–15 pairs of narrow leaflets and often 4 pairs of pinnæ. Growing in shade of bushes and trees near Culiacan.

Calliandra grandiflora Benth. Cofradia.

Lysiloma Watsoni Rose. Cofradia.

Lysiloma sp. Nearly glabrous, with large semicordate stipules that persist. Collected only in flower. Near the plant collected by Pringle in Rincon Mts., Arizona, 1884.

Bauhinia (*Pauletia*) **chlorantha.** A bush 2–3 m. high, the sulcate stems finely pubescent; leaves orbicular in circumscription, cordate, bilobed one-quarter of their length, the lobes rounded, pubescent on the 7–9 nerves beneath, 4–5 cm. long and wide; petioles 15 mm. long, pubescent; the stipules are slightly recurved prickles 5 mm. long and 4 mm. broad or less at the base; flowers in pairs in a terminal raceme or from the upper axils; peduncles 2 cm. long; calyx 10–12 cm. long, finely pubescent; stamens united near the base, 5 fertile, with narrow, pointed anthers 18 mm. long, the others with as long filaments and shorter, linear-lanceolate, rudimentary anthers; petals narrowly linear, not half as long as the stamens; pistil of the open flower 14–15 cm. long, exceeding the filaments; stipe of the pubescent ovary 7–8 cm. long: legume pubescent, 20–22 cm. long, 15 mm. wide, acuminate, plane.

This species is near *B. leptopetala* DC., but differs from it as figured in Calques des Dess. Fl. Mex., in having rounded lobes to the 9-nerved leaf, larger flowers and longer petals. The flowers of *B. chlorantha* have nearly the color of the surrounding vegetation. Collected in the vicinity of Culiacan.

Krameria prostrata. The hirsute stems prostrate, sparingly branched, 3–4 dm. long; larger leaves linear-lanceolate, nearly sessile, 2 cm. long, 2–3 mm. wide, hirsute beneath; flowers on 2-bracted peduncles 1 cm. long; sepals 1 cm. long; the three upper petals united three-fourths their length; stamens united near their bases; capsule globose, white silky-pubescent, 8 mm. in diameter; the spines subulate, 1 mm. long.

Collected at Cofradia. The slender stems of this species are not woody and the plant spreads flat upon the ground amongst other vegetation and but for the purple sepals would not be conspicuous.

Parkinsonia aculeata L. This small tree grows abundantly about Culiacan in depressions that after heavy rains are filled with water.

Hæmatoxylon boreale Watson. Very common about Culiacan.

Crotalaria eriocarpa Benth. Abundant about Cofradia.

Crotalaria Maypurensis HBK.? A single specimen in fruit was collected at Cofradia. It is nearly the same as Pringle's 4818, but has even more foliaceous stipules.

Dalea revoluta Watson. A perennial growing in dense clumps. The specimens are the same as those collected by the Lumholtz Expedition in Sonora.

Dalea diffusa Moric. Cofradia.

Dalia minor (Rose). Prostrate, spreading. Cofradia.

Tephrosia Toxicaria Pers. Cofradia and Cerro Colorado.

Tephrosia multifolia Rose. Not typical. Leaves more acuminate and cuneate at base. Flowers white, tinged with purple, vexillary stamen free only at base. A bush six feet high. Cerro Colorado.

Tephrosia rhodantha. Several stems 4–5 dm. high from a perennial root, hirsute with short spreading hairs and fewer much longer ones intermixed; leaves 10 cm. long and less with a short petiole 1 cm. long; leaflets 2.5 cm. long, 6 mm. wide, oblong, rounded at each end, nerves prominent beneath, acuminate with the excurrent midnerve, appressed white-hirsute upon both sides, whiter beneath, nearly sessile, about 8 pairs and a terminal one; stipules linear-lanceolate, 7 mm. long; flowers in terminal and axillary spikes 2 dm. long or less; bracts linear-lanceolate, 5 mm. long; calyx 2 mm. broad and long, the linear-lanceolate teeth longer than the purple-tinged tube, appressed white hirsute; flowers brick-red: banner 1 cm. long, slightly exceeding the keel: vexillary stamen free; mature legume sessile in the calyx, 6.5 cm. long, 4 mm. wide, slightly curved toward the tip, sparingly hirsute, acuminate.

Collected at Cofradia.

Æschynomene Acapulcensis Rose. The specimens are much younger than Dr. Palmer's and consequently more viscid. The plants are villous-pubescent. Cerro Colorado.

Eschynomene amorphoides Rose. A bush or small tree 15 feet high in the Cerro Colorado.

Zornia diphylla Pers. The western Mexican and Lower California specimens differ from those of Central Mexico somewhat. The more acute leaves are larger and the bracts are not so evidently punctate. There are also other minor differences.

Desmodium gramineum Gray. Cerro Colorado.

Desmodium orbiculare Schl. Cerro Colorado.

Desmodium (*Chalarium*) **chartaceum.** Frutescent, 2 m. high, the weak stems drooping at the ends, the younger growth, pedicels and branches of the panicle furnished with few, short, weak, uncinate hairs, otherwise glabrous; leaflets chartaceous, three or sometimes one: the terminal one, 6 cm. or less long, 20–22 mm. wide near the rounded base and then tapering to an obtuse or retuse apex that is rarely minutely mucronate: the lateral leaflets 15 mm. below the terminal, half its length, the same width and more oval in outline; petiole 1–3.5 cm. long; stipules 7 mm. long, linear-lanceolate, striate, soon deciduous; the leafless branching panicle 2 dm. long, pedicels 1–1.5 cm. long; calyx lobes 2 mm. long exceeding the tube; corolla purple, 8 mm. long; legume flat, stipitate, 23 mm. long, 3 mm. wide; joints 5, elliptical.

Near *D. Ghiesbreghtii* Hemsley, judging from its description. Cerro Colorado.

Centrosema sagittata H. & B. Cofradia.

Canavalia acuminata Rose. Culiacan and Cofradia.

Rhynchosia rupicola. Stems twining, 1 m. long, whole plant glandular-pubescent: petiole 1–2 cm. long: terminal leaflet ovate-acuminate, 3–3.5 cm. long, 2 cm. wide; lateral leaflets oblique-ovate, all resinous-dotted on under side: stipules triangular-lanceolate: racemes with 2–3 branches, axillary, 9–12 cm. long, 3–4 times exceeding the leaves; calyx 5-toothed, the two superior teeth slightly united at base, the lower tooth 6 mm. long, twice as long as the others and three times the length of the tube, all linear-lanceolate: banner 12 mm. long, striped with brown; wings yellow; keel violet and yellow: legume 2 cm. long, 8 mm. wide; seeds 2, black; hilum linear with funicle attached to the end: vexillary stamen free.

This plant is so glutinous that the stems stick together when collected. It differs from most species of the genus in having branched racemes and the attachment of the seed. Growing among rocks of the highest elevations of the Cerro Colorado.

Phaseolus rubescens Brandegee. This species was described from specimens collected in the Cape Region of Baja California. It is common on the low lands west of Culiacan. Dr. Palmer's 104 from Acapulco is the same species.

Erythroxylon sp. Probably the same species that Dr. Rose found at Tepic. Altata.

Guadichaudia filipendula Juss. Culiacan and Cofradia.

Heteropteris arborescens. A large bush or small tree 4–5 m. high with a spreading top; branches light brown thickly covered with small lenticles; leaves ovate-lanceolate, acuminate, 7 cm. long, 3–5 cm. wide, glabrous, biglandular on the nerves near the base or on the 6–10 mm. long, pubescent petiole; fruiting calyx 8-glandular; fruit in terminal or axillary panicles with brown-pubescent peduncles and pedicels, without crests; samaræ usually two, 3 cm. long: the wing 1.5 cm. broad above, straw-colored shading into bright red toward the margin; flowers not seen.

This small tree grows on the steep slopes of the Cerro Colorado, where its crowded brilliant fruit makes it very conspicuous.

Heteropteris Palmeri Rose? Seen only in fruit. Common about Cofradia.

Janusia Mexicana. Stems suffruticose, twining, 1 m. long and less, the new growth pubescent; larger leaves ovate acuminate, mucronate, pubescent, lighter colored beneath, 5 cm. long, 2–3 cm. wide; petioles 5 mm. long; inflorescence axillary in 3–4 flowered corymbs; peduncle 4 mm. long; pedicels 3–5 mm. long, with two leafy bracts at their bases, white-hirsute; bractlets minute; petals 5, clawed, 8 mm. long, the orbicular dentate-lacerate limb 5 mm. in diameter, orange-yellow; fertile stamens two, their filaments 4 mm. long, united near the base; the anthers orbicular, glabrous; style basilar, exceeding the stamens; stigma capitate; calyx lobes oblong-lanceolate, two biglandular, two uniglandular, one usually glandless, glands deciduous with age; mature fruit one carpel, dorsal wing 1 cm. long, 5 mm.

broad, the lateral wings short, with a short crest. No cleistogamous flowers were found with the specimens. Cerro Colorado and Culiacan.

Galphimia vestita Watson. It differs from the description in having bracts shorter than the pedicel and rarely glands on the leaves. Cofradia.

Malpighia umbellata Rose. A bush bearing an abundance of light pink handsome flowers. Culiacan.

Brysonima crassifolia HBK. Cerro Colorado.

Zanthoxylum arborescens Rose. Culiacan and Cofradia.

Zanthoxylum Pterota HBK. Culiacan.

Bursera collina. Branches glabrous; leaves except the terminal 2–3 pairs of pinnæ bipinnate, 7–15 cm. long, rachis pubescent and narrowly winged; pinnæ 3 cm. long; leaflets 2–3 pairs, ovate-acuminate, cuneate at base, 1–2.5 cm. long, 4–7 mm. wide, deeply crenate-serrate, sparingly pubescent, darker green above; fruit 1 cm. long, glabrous; peduncles 2–6 cm. long.

This species is near *B. diversifolia*. Cofradia.

Bursera tenuiflora Rose. Culiacan.

Bursera Palmeri Watson. Culiacan.

Bursera laxiflora Watson. Culiacan.

Bursera bipinnata Engler. Cerro Colorado.

Trichilia Colimana C. DC.? The leaves are pubescent, the panicles vary from one-quarter to one-half the length of the leaf and sometimes bear small leaflets. Culiacan.

Polygala glochidiata HBK. Cerro Colorado.

Polygala Albowiana Chodat. Nearly the same as Pringle's 3876. Cerro Colorado, Cofradia.

Polygala collina. Perennial, stems 3 dm. high, pubescent, sparingly branched; leaves alternate, puberulent, ovate-lanceolate, attenuate at base into a short petiole, 3–4 cm. long, 7 mm. wide, the lower much smaller; infloresence on axillary or supra-axillary flowered racemes that are shorter or longer than the leaves; few lower pair of sepals connate, upper sepal glandular on the margin, entire calyx persisting in fruit; wings obovate, inequilateral, shorter than the capsule, 4 mm. long; keel without crest, yellowish white; petals purple; capsule elliptic-oblong, glabrous; seeds

cylindrical, appressed-hairy; caruncle large, white, curved, 2-horned.

Growing in the Cerro Colorado. The flowers and fruit of this species are the same as those of *P. grandiflora* Walt., but the axillary infloresence gives it a very different appearance.

Polygala setifera. Annual, branching from above the base, glabrous, 15 cm. high and less; leaves 8–12 mm. long, 2–5 mm. wide, alternate, obovate, apiculate or setiferous at the tip, attenuate to a short petiole or sessile base and decurrent on the stem as a wing 1 cm. or more; spikes terminating the branches, 1–2.5 cm. long, densely flowered, the conspicuous, setiferous bracts exceeding the yellowish white flowers: wings broadly obovate, 2.5 mm. long; sepals long-setiform, broadened at the base; keel crested with 5–6 processes; cells of the capsule unequal; seeds dark brown, short pilose, nearly cylindrical, rounded at ends, caruncle half their length; stigma penicillate.

Collected on grassy slopes of Cerro Colorado.

Sebastiana Mexicana. Herbaceous: stems slightly pubescent, angled; leaves alternate, ovate-acuminate, often cordate at base, entire or serrulate, with few short hairs upon both surfaces and margins, 2–4 cm. long, 1–1.5 cm. wide; petioles pubescent, 5 mm. long: racemes axillary and terminal, much shorter than the leaves, the solitary pistillate flower at the base: staminate flowers minute, 1–2 with each bract, sessile: sepals 3, rose-colored; stamens 3, not exceeding the sepals: pistillate flower on a pedicel 1 mm. long; sepals 3; styles not united: capsule smooth, 4 mm. long, short-cylindrical, furnished with 6 subulate horns near the top and 6 similar ones near the base: seed nearly cylindrical; caruncle large, stipitate, disk-shaped and umbonate.

This species belongs to § *Microstachys* as defined by Müller in DC. Prodromus. Unfortunately only a few herbaceous branches were collected. Many of the leaves are purple-tinged. Culiacan.

Croton jucundus. Several herbaceous, sparingly stellate-pubescent, branching stems from a perennial root, 1 m. high: leaves ovate-lanceolate, obtuse, mucronate, 6–10 cm. long, 2–3 cm. wide, nearly glabrous above, sparingly stellate-pubescent below, more pubescent when young, 3-nerved at base and pin-

nately 8–10 nerved; margins entire and bearing few or many short-stipitate glands; base of the blade furnished with 4–8 long-stipitate glands; petiole ⅓ as long as the blade, sparingly stellate pubescent; stipules linear-lanceolate, 2–3 mm. long bearing longer stipitate glands: racemes monœcious, 3–6 cm. long with 2–7 pistillate flowers below: bracts linear, bearing long stipitate glands: pistillate flowers on pedicels 2–3 mm. long, apetalous; sepals 5, linear-lanceolate, 8 mm. long, stellate-pubescent, stipitate-glandular on the margins; styles 3 mm. long, 4 cleft to below the middle; ovary densely stellate-pubescent: staminate flowers on pedicels 1 mm. long; stamens about 12; sepals ovate-acuminate, stellate-pubescent, 1.5 mm. long; petals twice as long, spatulate; receptacle pilose; capsule shorter than the calyx lobes, stellate-pubescent.

This plant grows on the low, level lands about Yerba Buena near Altata.

It is very fragrant when living and the same odor is noticed when boiling the dried plant. The stipitate glands are much like those of *C. ciliato-glandulosus.*

Jatropha canescens Muell Yerba Buena, Altata.
Jatropha purpurea Rose. Culiacan.

Jatropha vernicosa. A bush 2–4 meters high, glabrous throughout; dioecious: leaves ovate-acuminate, cordate, 5–7 cm. long, 3–5 cm. wide, dark green and shining, pinnately veined, the margin bearing numerous sessile glands; petioles 3–7 cm. long; stipules represented by sessile glands; pistillate flowers usually solitary, terminating the branches; pedicels 2–3 cm. long; calyx lobes 5, distinct to the base, foliaceous, ovate, 5 mm. long, margined with sessile glands, glutinous and shining; petals ligulate, equalling the calyx, white or sometimes with a tinge of purple, distinct; disk entire; styles the same number as cells of the ovary (two with my specimens), distinct to the base and divided to the middle: capsule subglobose, 2 cm. in diameter: staminate flowers cymose-corymbose, the peduncles shorter than the leaves; calyx lobes elliptical, slightly united at base; stamens 10; glands of the disk five.

Common at middle elevations of the Cape Region mountains of Baja California. In general habit much resembling *J. canescens* of the same region, a species there also dioecious. I have plants of both species in cultivation and they thrive well in their new habitat. The construction of the flower of *J. vernicosa* shows that it belongs to *Adenoropium* of Benth. & Hook. My specimens of the Cape Region incorrectly named *J. cordata* belong to this new species. Specimens of *J. canescens* from Altata are monoecious.

Croton Californicus Muell. Arg. Altata.
Croton elægnoides Watson. Culiacan.
Croton glandulosus L. Culiacan.
Croton lobatus L. Culiacan.

Phyllanthus evanescens. Annual, stem simple, slightly winged below each leaf, erect, 2–2.5 dm. high, slightly puberulent; leaves glabrous, alternate, oblong-lanceolate, obtuse at base, 2.5 cm. long, 18 mm. wide; petioles 1 mm. long; one pistillate with 2–3 staminate flowers in the axils of the leaves: styles of pistillate flower, short, divided; calyx lobes, six, ovate, hyaline-margined, finally recurved; fruit 2.5 mm. in diameter, on recurved pedicels 1.5 mm. long; seeds sharply angled, minutely roughened, not striate; staminate flowers with shorter pedicels, anthers three, globose, sessile.

Growing during the early part of the rainy season under bushes and trees about Culiacan.

Sapium biglandulosum Müll. Culiacan.
Acalypha alopecuroides Jacq. Culiacan.
Acalypha subviscida Watson. Cerro Colorado.
Acalypha polystachya Jacq. Culiacan.
Dalechampia scandens L. Culiacan and Cofradia.

Euphorbia (*Cyttarospermum*) **Cofradiana.** Annual, erect, branching, 2–3 dm. high, slightly pubescent; upper leaves opposite, broadly ovate, rounded at the tip, cuneate at base, setulose on both surfaces, paler beneath, the larger 3 cm. long, nearly as wide, on petioles twice as long, those from the short axillary branches much smaller; flowers axillary, solitary, on pedicels 5 mm. long; involucres turbinate, less than 1 mm. high, setulose, the short lobes linear-lanceolate, lacerate; glands 5, each with 4 finger-like appendages; styles divided and distinct to the base; capsule setulose, 1.5 mm. in width: seed orbicular, pitted with numerous crater-like depressions.

Collected at Cofradia. This species is near *E. calicola* Fernald, but is not "viscid-setulose with long pale hairs," the involucre is turbinate instead of campanulate, the flowers are on much shorter pedicels and there are other minute differences. From *E. astroites* it seems also to be distinct.

Euphorbia (*Cyttarospermum*) **Humayensis.** Annual, freely branching, 3–4 dm. high, slightly pubescent, glandular about the ends of the branches; leaves nearly as broad as long, rounded at the tip, cuneate at base, slightly setulose on both surfaces, paler beneath, the larger 3 cm. long on much longer petioles; flowers solitary in the axils on pedicels 4 mm. long and less; involucres small, turbinate, setulose, lobes linear, lacerate; glands 5; appendages 0.25 mm. long, light green, entire; styles distinct and divided to the base; capsule glabrous, its stipe 2 mm. long: seeds orbicular, with numerous, acute-margined, crater-like pits.

This species was collected at Culiacan, on Cerro Colorado and in the foot-hills near Todos Santos of the Cape Region of Baja California. In general appearance it resembles *E. delicatula* Boiss., which is not glandular, has subpeltate leaves and is different in other respects. The Baja California specimens have larger leaves.

Euphorbia (*Zygophyllidium*) **Sinaloensis.** Annual, 1 m. high and less, much branched, glabrous throughout; leaves thin in texture, paler beneath, broadly ovate, obtusely pointed, cuneate at base, the largest 2 cm. wide, 3–5 cm. long; petioles 4 cm. long; flowers solitary or rarely two from the axils on pedicels 4 mm. long and less; lobes of the involucre quadrate, slightly fimbriate, white; glands 5, orbicular; appendages clear white, 2 mm. long, oblong, entire or slightly undulate; styles united near the base and divided half their length; capsule on a stipe 5 mm. long; seeds obtusely 6-angled, pointed at the top, granular-roughened, crenate on the angles.

A handsome delicate species from Cerro Colorado. The clear white appendages to the glands render it very conspicuous.

Euphorbia dioscorioides Boiss. Culiacan.

Euphorbia Francoana Boiss. Cofradia.

Euphorbia Colimæ Rose. A form with larger leaves and smaller bracts. Culiacan and Cofradia.

Euphorbia subreniforme Watson. Cofradia.

Euphorbia Californica Benth. Culiacan.

Euphorbia florida Englm. Involucre and appendages bright violet. Cofradia There are traces of this color in Dr. Palmer's

Guaymas specimens. On the sand near the coast at Altata there is a prostrate form, widely spreading.

Euphorbia adenoptera Bertol. A conspicuous form on account of the large, bright red appendages to the glands. Cofradia.

Euphorbia villifera Scheele. Cofradia and Cerro Colorado. The smaller plants belong to var. *nuda* and the larger are more or less villous about the lower part of the stems.

Euphorbia pediculifera Englm. Var. **inornata.** Glands without appendages, other characters those of the species. Cofradia.

Euphorbia gracillima Watson. Culiacan and Cofradia. Compared with the type by Dr. J. M. Greenman.

Pedilanthus rubescens. Stems numerous, 1–2 m. high, much-branched; leaves nearly glabrous, ovate-lanceolate, cuneate at base into a short petiole, 9 cm. long, 3.5 cm. wide, the upper and floral brick red, midrib winged and excurrent at the tip; involucre pubescent, cuneate at base, 15 mm. long; the two inferior lobes oblong-oval; the two intermediate ones narrow-linear, erose at apex, united with the two larger four-fifths their length; fifth lobe linear-acuminate; appendix bearing two fleshy deltoid, acuminate, bilobed segments; filaments glabrous; capsule smooth, on a stipe 1 cm. long, tipped when young with a style nearly as long, 12 mm. wide; seeds dark brown, pubescent, quadrangular, oblong, pointed.

This species is not uncommon about Culiacan, growing in the shade of other larger vegetation. The brick red color of the involucres and floral leaves is conspicuous. The plant is considered poisonous by the people of the neighborhood.

Hippocratea Mexicana Miers. Cerro Colorado, and an undetermined species from Cofradia.

Heliocarpus glaber. A bush or small tree with spreading top; branches rough with remains of old glands: leaves glabrous, cordate or rounded at base, ovate-acuminate, serrate with rounded teeth, 5-nerved, 10 cm. long, 8 cm. wide, on puberulent petioles 7–9 cm. long; inflorescence a large, spreading panicle; pedicels 2–3 mm long, stellate-pubescent; stipe less than 1 mm. long; fruit orbicular or oval, 6 mm. in diameter including the plumose

fringe that is shorter than the stellate-pubescent body. Cerro Colorado.

A flowering bush that seems to belong to this species was found on a sand bar of the Humaya River near Culiacan, where perhaps the seed had been brought by the water from the mountains. The calyx lobes are thickened at their tips and extended at right angles to the bud into a short horn. The petals shorter than the calyx are white, the stamens are short and the ovary white stellate-canescent. The calyx lobes and petals are often five.

Zizyphus Sonorensis Watson. Altata.

Wissadula elongata. Annual: stem unbranched, 8 dm. high or less, pubescent; leaves slightly pubescent, very broadly ovate, abruptly acuminate, cordate, repand-serrate, the largest 15 cm. long, 16–18 cm. wide, on petioles 12 cm. long, all growing from about the middle of the stem; inflorescence nearly sessile in an inconspicuously bracted spike, 4 dm. or less long; calyx lobes broadly triangular, short; petals yellow, 4 mm. long; carpels 5, tementose, obtusely pointed, longer than the calyx; seeds 3, pubescent.

Not uncommon about Cofradia and also found near Culiacan. The stem is leafless below, all the leaves growing from near the middle. It bears usually a single spike, but rarely in luxuriant specimens there are two.

Wissadula paniculata Rose, was collected at Cofradia and near Culiacan. It is a very handsome bush, sometimes 8 ft. high, with large, dense panicles of orange-colored flowers terminating the drooping branches.

Wissadula wissaduloides Rose. This bush is abundant in the vicinity of Cofradia. The flowers are white.

Wissadula incana. Stems woody, grayish green, minutely pubescent, 1 m. high; leaves cordate, ovate, 5 cm. long, 3 cm. wide or less, long-acuminate, crenate-serrate; petioles 4 cm. long; panicle lax, bearing small leaves or bracts; petals 4 mm. long, white drying slightly purple; calyx lobes triangular-acuminate; stamineal column short; carpels 3, obtuse, muticous: the two

collateral seeds minutely tuberculate-roughened, the lower seed stellate-pubescent, with a white-tomentose cap.

This species is near *W. wissaduloides* and differs from my immature specimens collected near the type locality in being minutely pubescent like *Abutilon incanum*, with no glandular hairs and in its more diffuse and less leafy panicle. Common about Culiacan.

Hibiscus Coulteri Harv. Growing on the hills near Culiacan.

Hibiscus violaceus. Woody at base, 1m high, with few erect stems, sparingly branched above, glabrous; leaves ovate-acuminate, cuneate, truncate or rarely slightly cordate at base, crenate-serrate, sometimes a few simple hairs on the paler under surface, the largest 6 cm. wide, 8 cm. long, on petioles 2 cm. long; inflorescence axillary, usually of single flowers on pedicels 3–4 cm. long; distinct bractlets of the involucel 12 mm long, much exceeding the calyx lobes, linear-lanceolate; lobes of the five-parted calyx deltoid-lanceolate; petals 12 mm. long, violet; capsule shorter than the calyx, with few long bristles; seed densely covered with long wool.

Culiacan and Cofradia, growing in shaded cañons. The plants bear few flowers and are never numerous.

Kosteletzkya paniculata Benth. Cerro Colorado.

Kosteletzkya sp. Culiacan.

Malvaviscus rivularis. Shrubby, branched, 1 m. high; young branches densely stellate-pubescent; leaves ovate-lanceolate, cuneate at base, serrate, rarely trilobed near the tip, largest 8 cm. long, 4 cm. wide, digitately 5–7 nerved, sparingly pubescent above, more so below, especially on the nerves; petioles 1-2 cm. long, densely pubescent: flowers axillary near the ends of the branches, or terminal, solitary on pubescent peduncles 1–2 cm. long: bractlets of the involucre 8, linear-lanceolate, 12–14 mm. long, shorter than the calyx; calyx lobes triangular, half as long as the tube, pubescent; petals crimson, 15 mm. long, with few stellate hairs on the outside near their tips: auricle ciliate with long hairs; staminеal column double the length of the petals; style branches short, 5.

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Growing on the banks of the Cofradia River. It is known by the name "Media Noche." Most species of *Malvaviscus* have cordate leaves and this one differs also from the characters of the genus in having five stigmas instead of ten. *M. Sepium* in my collection of Pringle, No. 8201 has only five stigmas. This new species is nearest *M. lanceolata* Rose.

Malachra capitata L. Culiacan, growing about dwellings.

Periptera punicea DC. The specimens are young and lack mature fruit. They seem to agree with the figure of this species in Contrib. U. S. Nat. Herb. V. 173. Collected on the Cerro Colorado.

Abutilon incanum Sweet. Culiacan.

Abutilon crispum Don. Yervacito.

Several species of *Abutilon* have not been identified.

Sida longifolia. Stems erect from a ligneous root, 4 dm. high, sparingly hirsute and more or less scabrous with small, pointed tubercles; leaves linear-lanceolate, slightly rounded at base, 12 cm. long, 8–9 mm. wide, sparingly hirsute upon both faces, entire, ciliate; petiole 8 mm. long, rarely with a spinose tubercle at the base; stipules as long as the petiole; inflorescence terminal or crowded at the ends of axillary branches that are 4 cm. long and less, shorter than the subtending leaf and bearing 1–3 linear leaves; calyx lobes triangular, hirsute, as long as the tube: corolla yellow, 1 cm. in diameter; pedicels hirsute, 5 mm. long; carpels 5, with two short cusps, indehiscent; seeds smooth.

Collected on the Cerro Colorado.

Sida Lodiegensis Baker f. The plant is common between Imala and Cofradia. The flowers of my specimens are yellow when dried. It grows in clumps of many stems about a foot and a half high and blossoms in November.

Sida aggregata Presl. Carpels more than five. The Cofradia form has three-lobed lower leaves. Culiacan and Cofradia.

Sida anomala St. Hill. Culiacan.

Sida salviæfolia Presl. Culiacan.

Sida Alamosana Watson. The specimens referred to this species are always annual and variable in their characters. They are not typical except in the structure of the carpels and are

rarely glandular Culiacan, Cofradia and from the mountains about San José del Cabo, Baja California.

Anoda reticulata Watson. Cerro Colorado. The type came from Arizona.

Anoda crenatiflora Ort. Cofradia and Culiacan.

Anoda pentaschista Gray. Culiacan.

Helicteres mollis Presl. Cerro Colorado.

Melochia serrata Benth. Culiacan.

Melochia speciosa Watson. A spreading bush 4-6 feet high and very handsome when in flower. Common east of Altata reaching nearly to Culiacan. The stellate pubescence of the leaves is denser and finer than that of the Guaymas type specimens.

Waltheria acuminata Rose. Sometimes 15 feet high. Cofradia.

Buettneria tiliæfolia Presl. Nearest this species of any described in Reliquiæ Hænkeanæ. It is a bush with weak, green, reclining stems. Common in cañons about Culiacan

Ionidium lasiocarpum Presl. A small shrub growing in shade of trees. It agrees nearly with the description in Reliquiæ Hænkeanæ. Culiacan and Cofradia.

Amoreuxia palmatifida DC. Culiacan.

Carica? sp. A plant evidently near *C. caudata* of the Cape Region of Baja California. Its local name is "Quadratos" and the fruit is said to be edible, but as is the case with many Mexican plants said to be good to eat, a good appetite is the first requisition. This plant is erect, about a foot high, and bears large deltoid 3-lobed leaves. The fruit, about a dozen to each plant, 1–2 inches long, is born on a spike, is bright red, 5-angled, ovate, truncate at top and with five sharp points in place of the "tails" of *C. caudata.* It was found only in fruit and but one plant was seen with the fruit attached. At maturity the whole plant disappears and only a circle of the bright red fruit marks the place where it grew. It is not uncommon about Cofradia.

Mentzelia adherens Benth. Cerro Colorado.

Cuphea delicatula. Annual, diffusely spreading from the base, 1 dm. high or less; stems geniculate, slightly puberulent and bearing few, short, soft, triangular bristles; leaves unequal, linear, obtuse, revolute, sparingly bristly on the margins, sessile

with a slightly auriculate base, the larger 15–20 mm. long, the opposite one 2–7 mm. long; pedicels solitary, 4–5 mm. long, bractless; calyx tube 4–5 mm. long; spur triangular, 1–2 mm. long; dorsal lobes salmon yellow; the 4 ventral, dark violet, oval petals 3 mm. long, on short claws; the dorsal petals slightly smaller, on filiform claws, lavender-colored: the 9 ventral stamens subequal, two very tomentose, the 2 dorsal much smaller; disk dorsal; ovules 4; seeds orbicular with a narrow margin.

Cofradia and Cerro Colorado. Growing in thin, rocky soil that soon becomes dry.

Cuphea lobophora Koehne. Various forms were collected at Culiacan. Cofradia and Cerro Colorado.

Cuphea Palmeri Watson. The plant referred to this species grows about Culiacan during the early part of the rainy season. The leaves are ovate-lanceolate and the four ventral petals white.

Cuphea Humayana. Annual; stem simple, erect 3–4 dm. high, pubescent and glandular; leaves ovate-acuminate, cordate to cuneate at base, 2.5 cm. and less wide, 5 cm. and less long, scabrous-hirsute on both faces; petioles 1.5 cm. long; flowers usually two from about the axils of the upper leaves and the linear-lanceolate, ciliate bracts; calyx 11–13 mm. long, 6–7 mm. wide, at maturity closed by the produced dorsal lobe, hirsute, slightly gibbous; pedicels 3 mm. long; dorsal petals obovate, on long claws, purple, the 4 ventral white, linear and shorter; stamens included, the filaments more or less bearded; disk erect; seeds brown, 3.

This Cuphea belongs to § *Heterodon*. It differs from *C. Palmeri* in the broader, less gibbous calyx, the larger, often cordate leaves and in having no scales below the dorsal petals, also the seeds are only three. Collected on low damp ground near Culiacan.

Ammania auriculata Willd. Growing in mud-depressions along the rivers. Culiacan.

Rotala dentifera Koehne. Culiacan.

Lennoa madreporoides Llav. & Lex.? Parasitic on Boerhaavia. Growing in sand near Culiacan.

Miconia saxicola. Several woody stems from the root, 1–2 dm. high forming a small compact bush, tawny hirsute-pubescent: leaves broadly ovate-acuminate, the largest with a blade 14 cm. long, 10 cm. wide, cordate, setulose on the upper face, pubescent-setulose below, margins slightly repand-denticulate, the teeth terminating in a short stout bristle, 5–7 nerved from the base, the opposite one often much smaller; petioles 4–10 cm. long, hirsute-pubescent: inflorescence in lax corymbose panicles, that are shorter than the leaves and about 6-flowered; calyx becoming urceolate when the fruit is mature, 7–10 mm. high, tawny pubescent; lobes 6, quadrate, hyaline-margined, setulose; exteriorly furnished with a linear-lanceolate, setose-tipped appendage of equal length: petals 6, broadly obovate, white, 11 mm. long, stamens 12, 1 cm. long; anthers as long as the filaments: fruit coriaceous, nearly spherical, 6–7 mm. in diameter, 5-celled, adherent to the calyx excepting the convex, glabrous top: seeds numerous.

Growing on cliffs of the Cerro Colorado.

Ardisia scopulina. A tree 5–7 m. high, glabrous throughout; leaves 15 cm. long, 6 cm. wide, obovate, pointed, gradually cuneate into a petiole 1 cm. long, the margins entire and somewhat revolute, rather thick in texture, minutely and obscurely dotted: inflorescence many-flowered in bipinnate panicles about as long as the leaves; pedicels 6 mm. long; flowers 4 mm. long; sepals almost free, ovate, 4 mm. long, minutely ciliate, furnished with dark lines and dots; petals connate one-fourth their length, recurved, 6 mm. long, lobes sublingulate-acuminate and marked by numerous short, dark lines; stamens inserted below a yellow puberulent ring; anthers apiculate, the cells open their whole length.

Collected in rocky cañons about Cofradia and Cerro Colorado. This species is related to *A. escallanioides* Ch. & Sch., but has a dextrorse arrangement of the petals in the bud, is glabrous, has larger leaves and a bipinnate panicle.

Mitreola petiolata T. & G. Growing in damp soil at Cofradia and Culiacan.

Rauwolfia heterophylla R. & S. Culiacan and Cofradia.

Thevetia cuneifolia A. DC. Culiacan.

Macrosiphonia hypoleuca Muell. Arg. Cerro Colorado.

Stemmadenia Palmeri Rose. Cofradia.

Philibertia crassifolia Hemsley. Compared with 4849 of Pringle's collection from Oaxaca, the follicles are slightly more pnbescent, the corolla perhaps of thicker texture and less pubescent. Growing in a single locality on the banks of the Tamazula River near Culiacan, where the seed may have been brought from the mountains.

Metastelma cuneata. Twining 2–3 m., glabrous excepting the pubescent lines of the stem; leaves ovate-lanceolate, acuminate, cuneate or nearly obtuse at base, the largest 3 cm. long, 17 mm. wide, on petioles 7 mm. long; peduncles 1 mm. long equalling the 4–9 pedicels; calyx 1 mm. long, the lobes obtuse; corolla 2 mm. long parted nearly to the base into 5 linear, acute lobes that are glabrous within; column 0.5 mm. long; the minute scale of the corona attached at its summit and not exceeding the anthers; fruit unknown.

Collected at Yerba Buena near Altata.

Asclepias Mexicana Cav. Cerro Colorado.

Asclepias Curassavica L. Culiacan and Cofradia.

Asclepias albicans Watson. Altata.

Melinia Mexicana. Stems filiform, branching from the root, somewhat twining, 3 dm. long, sparingly pubescent; leaves opposite, narrowly linear, 2.5 mm. long, distinctly petioled, acuminate; peduncles about 4-flowered, 3 mm. long equalling the pedicels; flowers campanulate; corolla 5-parted; lobes 2.5 mm. long, reflexed, puberulent at the tips, linear; sepals lanceolate, acuminate, nearly equalling the corolla; scales of the crown distinct, triangular-subulate, half the length of the corolla lobes; terminal membrane of the anthers oblong, slightly surpassed by the columnar entire beak of the stigma; follicle tapering from near the base to the tip, 4 cm. long, 7 mm. wide, glabrous. Cerro Colorado.

Ipomœa crinita. A climbing woody vine: stems, peduncles and petioles pilose with white spreading hairs 4–5 mm. long; leaves broadly ovate, 7-nerved at the base, with few hairs on the lower face and the nerves of the upper, 3-lobed more or less

deeply, ciliate, 10 cm. long, 14 cm. wide; petioles 6–14 cm. long; peduncles 20–22 cm. long, longer than the leaves; flowers somewhat umbellate on pedicels 1–1.5 cm. long: corolla white, funnelform, 7 cm. long, with spreading limb 6–7 cm. wide; stamens included; the three outer sepals pilose, 7 mm. long, broad and apiculate, the inner glabrous and broader; capsule exceeding the calyx, ovate, acute with a mucro 4–6 mm. long, circumscissile, 2-celled, 4-seeded; seed 6 mm. long, bearing on the back and outer angles white silky hairs longer than the seed itself.

A handsome plant and very floriferous. Collected in ravines near Culiacan.

Ipomœa Palmeri Watson. Cofradia.

Ipomœa bracteata Cav. Culiacan.

Ipomœa alata Rose. The corolla is brick red. Culiacan and Cofradia.

Ipomœa Grayi Rose. Common about Culiacan, also collected at Mazatlan and cultivated as an ornamental plant at Todos Santos, Baja California.

Ipomœa quinquefolia Griseb. Culiacan.

Ipomœa pedatisecta M. & G.? The flowers are white with purple throat. Common about Cofradia.

Ipomœa Sinaloensis. A vine supported by other vegetation, hardly climbing, perennial?: stems, petioles and peduncles bristly hirsute, the tawny hairs 4 mm. long: leaves palmately parted into 5 ovate-acuminate leaflets that are cuneate at base, entire-margined, sparingly hirsute upon both faces, varying in size from 2–4 cm. long, 1–3 cm. wide: petioles 3–7 cm. long: peduncles 6–12 cm. long; the branching cymes 3–6 flowered: the 3 outer sepals densely yellowish hirsute, oblong, acuminate, 14 mm. long, the 2 inner, smooth, chartaceous, shorter and broader: corolla pure white, 22 mm. long, campanulate, 5-lobed to below the middle, the lobes spatulate: stamens reaching slightly above the sinus of the lobes: stigma 2-lobed: capsule 4-celled, 4-seeded, nearly spherical, 1 cm. in diameter, the 4 valves separating to the base, leaving the partitions retaining the seeds, the partitions are broadened at the margins, 1 mm. wide below, increasing to 2 mm. above and ⅓ the distance from the top abruptly widened so

as to include the whole upper part and seeming in the mature fruit to be triangular: seeds smooth.

Collected near Culiacan. A remarkable *Ipomœa* and on account of its deeply lobed corolla and broad margins of the dissepiments more worthy of generic rank than *Quamoclit*, *Pharbitis*, *&c.*

Ipomœa megacarpa. Stems usually not twining, prostrate or ascending bushes, glabrous; leaves cordate with a broad, open sinus, long-acuminate, varying in outline from deeply sinuate-pinnatifid to pinnately parted nearly to the midrib into 5 narrow lobes, 4–7 cm. long, 5–8 cm. wide; petioles 1.5–4 cm. long; peduncle from the axil of the leaf, 6–8 cm. long, 1 rarely 2-flowered; pedicels 2 cm. long, striate, gradually increasing in size upward; sepals of fruiting calyx orbicular, 15 mm. in diameter, often apiculate, membranous, scarious-margined; ovary 2-celled: caspule equalling the calyx, flattened horizontally, 2 cm. in diameter, thin-chartaceous, splitting from the top irregularly; seeds 4, rounded, 7 mm. in diameter, glabrous; corolla white with dark purple throat, short-funnel-form, 5 cm. long, 6 cm. wide.

Growing about Culiacan. Flowers open during the morning.

Ipomœa arborescens Don.? Very abundant about Culiacan and Cofradia.

Ipomœa leptotoma Torr. Altata to Cofradia.

Ipomœa sinuata Ortega. Altata.

Ipomœa peduncularis Bertol. Culiacan.

Ipomœa filipes Benth. Cofradia.

Ipomœa spinulosa Brandg. Culiacan.

Ipomœa sp. Collected at Culiacan and Yerba Buena without fruit. It resembles *I. scopulorum*.

Heliotropuim (*Orthostachys*) **saxatile.** Frutescent, erect, strigose-canescent, 4–5 dm. high, branched: leaves ovate-oblong, acuminate, sessile or nearly so, 2 cm. long, 5 mm. wide, margins revolute: flowers sessile in dense unilateral spikes 5–8 cm. long: corolla 4 mm. long, white; tube as long as the calyx; lobes short, broadly triangular; stigma tip conical, much shorter than the style: calyx lobes nearly equal, ovate-lanceolate, in age becoming foliaceous and resembling the shorter, ovate bracts.

Nutlets of the specimens are immature. Cofradia, growing in rocky soil.

Jacquemontia macrocephala. Annual; stems erect or sometimes slightly twining, 3–4 dm. long, hirsute with long white hairs; leaves ovate-acuminate, cuneate at base, on hirsute petioles 1–3 cm. long, ciliate with white hairs and bearing a few similar ones on both faces; inflorescence in a glomerate cluster that is about 15-flowered: foliaceous bracts ovate-lanceolate, 2 cm. long; sepals linear-lanceolate, densely long white-hirsute, similar to the subtending bracteoles; violet corolla slightly exceeding the sepals; seed minutely roughened.

Growing in the loose soil of steep banks near the base of cliffs. Cerro Colorado.

Jacquemontia Palmeri Watson. Not typical but more like the Lower California form, somewhat hirsute and glandular with longer calyx lobes. Leaves dotted and stems more or less twining. Cerro Colorado.

Bonplandia geminiflora HBK. Cerro Colorado.

Hydrolea spinosa L. Common, growing in various forms.

Cordia Palmeri Watson. Altata.

Cordia gerascanthus Jacq. A common and handsome tree in the region about Cofradia.

Cordia Pringlei Robinson, var. **Altatensis.** Teeth of the calyx thicker, a half shorter, not as stellate-pubescent, recurved and not as evident as those of Pringle's specimen of the species. Common about Yerba Buena near Altata. The fruit is light red.

Lippia graveolens HBK. Cerro Colorado.

Bouchea dissecta Watson. Common about Culiacan. The flowers are pink.

Citharexylum Cinaloanum Robinson. Culiacan. This the same as the Baja California plant referred to *C. Berlandieri.*

Salvia Alamosana Rose. Cofradia and Cerro Colorado.

Salvia galinsogifolia Fernald. Culiacan.

Salvia lateriflora Fernald. Culiacan.

Russelia furfuracea. Suffrutescent, many stems from the base, 2–3 dm. high, densely spreading-hirsute, not angled, striate; whole plant except the corolla densely covered with

minute circular scales that are free at their edges and on the leaves surrounding glandular pits; internodes generally shorter than the leaves; lower leaves of the larger plants ternate, broadly-ovate, obtuse, cuneate at base into a very short petiole, coarsely crenate-serrate, slightly pubescent on the prominent veins, 3.5 cm. long, 2.2 cm. wide, upper leaves and leaves of smaller plants similar, 1 cm. long: inflorescence near the end of the stems or the numerous short branches of large plants; cymes axillary from the leafy bracts, about 6-flowered; peduncles 5 mm. long; pedicels 3 mm. long; calyx 3 mm. long, divided into ovate, long-acuminate lobes nearly to the base: corolla scarlet, 1 cm. long, internally pubescent about the insertion of the stamens and yellow-bearded along a ventral line; lobes rounded: capsule ovate-acuminate about as long as the calyx.

Growing on cliffs in sunny exposures of the Cerro Colorado.

Stemodia Palmeri Gray. Culiacan.

Scoparia annua Ch. & Schl. Growing on muddy banks of Tamazula River. Flowers yellow.

Seymeria bipinnatisecta Seem. Cerro Colorado.

Buchnera Mexicana Hemsley. The plant is the same as that of the Cape Region of Lower California. It is usually not branched and has small ovate radical leaves. Flowers of the living plant are white but when dried seem to have been blue. Cerro Colorado.

Pinguicula crenatiloba DC. Cofradia.

Amphilophium purpureum. A bush with somewhat climbing stems and branches, 3–4 m. long; stems striate, glabrous, slightly lepidote when young; leaflets 2 on puberulent petioles 1 cm. long, terminating the 2–5 cm. long, rufous petiole, ovate-acuminate, cordate or rounded and unequal at base, 7 cm. long, 4 cm. wide, glabrous, minutely shining-lepidote on both surfaces; inflorescence terminating the branches in a few flowered panicle; pedicels 7 mm. long; calyx densely lepidote, 9 mm. long, nearly hemispherical; lobes broad, obtuse-triangular, much exceeded by the inner lobes; corolla 4 cm. long, dark-violet; anthers glabrous; fruit 8 cm. long, 4 cm. wide, roughened and lepidote.

This plant grows in the bottom of arroyos and cañons near Culiacan.

Blechum Brownei Juss. Culiacan and Cofradia.

Barleria micans Nees. Cerro Colorado. The large flowers are bright yellow.

Carlowrightia Californica Brandegee. This is the common species about Culiacan. It is easily recognized by the minute calyx of the straw-colored flowers that are secund along the leafless spicate branches.

Justicia Mexicana Rose. Common about Culiacan and Cofradia.

Justicia reflexiflora Rich. Forms of this species grow about Culiacan.

Portlandia pterosperma Watson. Culiacan and very abundant east of Altata.

Houstonia parvula. Annual, erect, 2–5 cm. high, sparingly branched, minutely hirsute; leaves linear, spatulate-lanceolate; 1 cm. long; stipules short, minutely setulose-ciliate; flowers solitary in the axils of the leaves on pedicels 0.5 mm. long that are recurved with the mature fruit; petals minute, shorter than the 1 mm. long subulate calyx lobes; capsule ¾ inferior, broader than long, subdidymous; seeds 4–6 in each cell, cymbiform, with medial hilar ridge.

Growing on gravel deposits of the Tamazula River near Culiacan.

Rondeletia sp. Cerro Colorado.

Bouvardia linearis H. B. K. Cerro Colorado.

Genipa echinocarpa Gray. Culiacan.

Crusea villosa Watson. Culiacan.

Crusea coronata Rob. & Greenman. Common about Cofradia.

Mitracarpum Schizangium DC. Agreeing with the figure in Bot. Beech, excepting that the corollas are longer and more slender. Cerro Colorado.

Apodanthera Roseana Cogn. Altata to Culiacan.

Maximowiczia Sonoræ Watson. Altata. Leaves and fruit smaller than those of Guaymas specimens.

Schizocarpum Palmeri Cogn. & Rose. This is the most common cucurbit. It is very variable in the form of its leaves and abundance of the long, scattered hairs.

Cucurbita radicans Naud. Generally climbing bushes and trees, but sometimes prostrate over the ground. Altata to Cofradia.

Elaterium longisepalum Cogn. Common in ravines. The mature fruit is very gibbous, 22 mm. long, 13 mm. wide, densely covered with soft, gray spines.

Cyclanthera micrantha Cogn. Common.

Echinopepon lanatus Rose. Common over the whole region.

Echinopepon cirrhopedunculatus Rose. Cerro Colorado.

Roseanthus elongatus Rose. Cerro Colorado.

Decachæta Haenkeana DC. Cerro Colorado. It is often 8 feet tall.

Ageratella Palmeri Robinson. Growing among rocks of Cerro Colorado.

Barroetea subligera Gray. Culiacan.

Brickellia diffusa Gray. Common about Cofradia.

Ophryosporus ovatifolius B. & H.? Probably this species, although it does not exactly agree with the description in DC. Prod. The plant is not frutescent and is minutely resinous-dotted. Collected on Cerro Colorado.

Ageratum corymbosum Zucc. Var. Common about Cofradia.

Ageratum sp. Differing from *E. lucidum* Rob. in its more compound corymb, smaller heads and akenes, green stems and larger leaves. Cerro Colorado.

Guardiola rotundifolia Robinson. Cofradia.

Melampodium canescens. Erect, 1–2 dm. high, widely branched; stems villous-hirsute; leaves entire, 2–3 cm. long, 3–4 mm. wide, linear-lanceolate, narrowed to the sessile base, slightly pubescent and scabrous above, densely white flocculent-sericeous below; peduncles filiform, 1–4 cm. long; heads 8–10 mm. broad including the orbicular rays that are 1 cm. in diameter; involucral bracts ovate, ciliate; fruit tuberculate; hood ciliate, truncate, nearly equalling the circumference of the top of the akene, with a long, curved appendage from the center and one from each of the ends.

In general appearance this species resembles *M. longipes* Robinson. Growing on dry rocky soil about Cofradia.

Melampodium geminatum. Annual, branching above, 6–7 dm. high, sparingly hirsute: leaves somewhat hirsute upon both sides, elliptical-acuminate, narrowed to the base, 4–7 cm. long, 2–3 cm. wide, crenate-serrate; petioles 1–4 cm. long: inflorescence in lax corymbose panicles from the ends of the short branches; peduncles 1–4 cm. long; pedicels 5–10 mm. long: bracts of the outer involucre 5, membranaceous, imbricated, ovate-lanceolate, acuminate, striate, 3–3.5 mm. long, the outer two much smaller: ray flowers 2, pistillate; rays yellow, 2 mm. long; style divided more than half its length into narrow branches: sterile flowers 2; corollas 5-toothed, the tube as long as the campanulate limb, loosely enclosed by bracts that are yellow tinged, pointed and dentate above: akenes 4 mm. long, obovoid, subcompressed, under a lense transversely rugose with numerous small ridges; the enveloping bract to be removed only by boiling and scraping, tuberculate and near the top from each side bearing a short subulate horn.

This interesting plant suggests in its general appearance and some of its characters *Trigonospermum*, but its akene permanently invested by the bract prevents it from going into that genus. The characters of the involucres are not unlike those of *Unxia*, a genus reduced to *Melampodium* by Benth. & Hook. Collected near Cofradia and Imala.

Gymnolomia auriculata. Many hispid-hirsute stems from a perennial root, 5–6 dm. high; leaves narrow-lanceolate, on petioles 1–2 mm. long or sessile, somewhat auriculate at base, scabrous, slightly dentate, 10–14 cm. long, 10–12 mm. wide, broadest above the middle, with strong midrib; heads solitary, terminating the stems on peduncles 8–12 cm. long, hemispherical, 2 cm. in diameter: peduncles thickened upward; bracts of the involucre ovate-lanceolate, 1 cm. long, long-hirsute; rays 10–15, 2.5 cm. long, 4 mm. broad, with a rudimentary style and 2–3 distinct rudimentary anthers, the akenes inane and triangular; disk flowers yellow, numerous; corolla tube pubescent, covering the top of the somewhat compressed, quadrangular akene; pappus none.

A rudimentary style has been noticed by Dr. Gray in the description of *G. Greggii.* Growing abundantly about the rocky summits of the Cerro Colorado.

Zexmenia fasciculata Sch. Bip., was collected on Cerro Colorado and in the arroyos running from the mountain.

Zexmenia Seemannii Gray. Cerro Colorado. Determined by Dr. J. M. Greenman.

Bidens refracta Brandegee, is very common about Cofradia. The species was first found at Miraflores, Baja California, and the type locality is the only one known on the Peninsula, where it was probably introduced from Sinaloa.

Bidens Alamosana Rose, is common on the low lands along the rivers near Culiacan. It becomes 8 ft. high and the large, orange-colored rays are conspicuous.

Bidens oligantha. Annual, 2–3 dm. high; stems slightly puberulent, sulcate, simple or with 2–3 branches from below the middle: leaves trifid, almost pinnate; the middle lobe linear-lanceolate, acuminate, more or less serrate, 2 cm. long or less; the lateral lobes 5–8 mm. long, ovate-acuminate, often incised; uppermost leaves linear-lanceolate: peduncles 2–6, 6–10 cm. long: outer involucre of ovate-lanceolate bracts 3 mm. long, equalling the inner: rays 3 mm. long, white striped with purple: akenes variable, when mature about 5 mm. long, beaked or truncate in the same head, curved, smooth or hispid on the angles: awns 2 or none, 1 mm. long, divergent. Cofradia.

Tridax procumbens L. Common along the banks of the Cofradia River.

Galinsoga filiformis Hemsley, is very abundant in damp soil about Cofradia.

Perityle grandifolia. Stems branching from a suffrutescent perennial root, 1–2 dm. high; whole plant pubescent: leaves broadly ovate, 5–7 cm. long, 4–5 cm. wide, crenate-serrate, thin in texture, on petioles 3–4 cm. long: rays yellow, 5 mm. long, 1.5 mm. wide: involucral scales linear, 5–6 mm. long: akenes without callous margins and pappus: corollas 4 mm. long, narrow; tube puberulent; style-branches slender-subulate.

Growing on rocks of Cerro Colorado. *P. dissecta* also has subulate

style branches and by some authors is referred to *Laphamia* on that account.

Perityle saxosa. Many stems branching from an apparently perennial root, 4–5 dm. high, puberulent; leaves deltoid-acuminate, cuneate at base; the blade 2–3 cm. long, 1.5–2 cm. wide, atomiferous, about equalling the petiole: heads paniculate on peduncles 2–6 cm. long; rays white, 2–3 mm. long and half as broad: bracts of the involucre 4 mm. long, ovate-lanceolate: disk flowers numerous: akenes pubescent on both faces and from the same plant with or without callous margins, 2 mm. long: pappus two delicate awns, the larger half the length of the akene, the other absent or minute and a short crown of fimbriate scales.

The character of having or lacking callous margins to the akenes has always been considered a good one but this plant would seem to render such a distinction of doubtful value. The margins are always minutely ciliate. Growing on rocks of Cerro Colorado.

Porophyllum quinqueflorum. Annual, 5–6 dm. high, branching above the middle; stems terete, somewhat striate: leaves thin in texture, alternate, cuneate at base and rounded at tip, 2–5 cm. long, 1–2 cm. wide; marginal glands 0–7; petioles filiform, 2–3 cm. long: heads 1.7 cm. long: peduncles from the axils of the leaves, very slightly thickened upward; involucral scales 5, linear-lanceolate, green, with a single row of linear glands: flowers ochroleucous, 9 mm. long: akenes 5, 8 mm. long. Growing in damp, dark ravines. Cerro Colorado.

Pectis purpurea. Annual, 1–2 dm. high, branches ascending from near the base; stems angular, glabrous, purple: leaves linear-lanceolate, 3–4 cm. long, 3–4 mm. wide, margins revolute, 2–4 rows of large glands beneath, setiferous near the dentate base: inflorescence terminal and from the upper axils; peduncles 6–8 cm. long, with few bracts: involucre campanulate, 4–5 mm. high, purple; scales linear, slightly pubescent at the obtuse tip, bearing large, roundish glands and keeled near the base: rays about 8, linear, 6 mm. long, purple on the back: disk flowers numerous: pappus minute, scales broad as long, sometimes slightly pointed, fimbriate: akenes pubescent.

The purple hue of the stems, involucres and flowers of the growing plant suggests the specific name. The glands of the leaves are very large. Collected about the margins of openings and along trails near Cofradia. Perhaps nearest to *P. Rosei.*

Pectis scabra. Annual, branching from the base, 1 dm. high; stems purple, scabrous-pubescent: leaves linear-lanceolate, 1–2 cm. long, 1–3 mm. wide, scabrous above, on the revolute margins and midrib beneath, sparingly setulose near the base; inflorescence somewhat terminal and fastigiate from the upper axils; peduncles 2–4 cm. long, sparingly bracteolate: involucre 15–20 flowered; scales 6, linear, keeled below the middle, scarious-margined when mature, each bearing 5–6 glands; rays yellow, 6–9, linear: pappus of ray akenes 1–2 stiff awns with a few very small scales at base; pappus of the disk akenes 1–2 awns dilated at base and 1–2 small scales; akenes slightly pubescent.

This species grows in dry rocky soil and is conspicuous on account of its gray appearance. It might be considered a very scabrous variety of *P. filipes.* Cofradia.

Pectis salina. Annual, the procumbent, spreading, purple branches, 2 dm. long, glabrous throughout; leaves linear-lanceolate, 2–4 cm. long, 6–8 mm. wide, punctate beneath with 2–4 rows of glands, with 1–6 pairs of setæ below the middle: peduncles 2–6 cm. long, terminal and from the upper axils, naked or few-bracteate: involucre campanulate, 5–6 mm. high, about 50-flowered; bracts about 8, linear, somewhat acute, bearing several linear glands, strongly keeled at the base when mature: rays bright yellow, fading darker, 5–6 mm. long: pappus of the disk akenes 3–5 awns, 3–4 mm. long, with broad, intermediate lacerate scales 1 mm. long; pappus of the ray akenes 1–2 scales with or without an awn; akenes 3 mm. long, hispidulous.

Growing in saline soil of the salt marshes about Altata with *Suæda, Salicornia, Philoxerus,* &c. The living plant is somewhat fleshy.

Pectis canescens HBK. Var.? Cofradia.

Hymenatherum anomalum Canby & Rose. Pappus 1.5 mm. long, of 10 delicate, fimbriate scales, tipped with a bristle shorter than the corolla, sometimes 1–2 exterior, oblong, fimbriate, minute.

Growing in damp soil near Imala.

Spilanthes leucophæa Klatt. Culiacan and Cofradia.